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passes on to the roller at the extremity of the first web, near which a detached roller receives its most advanced end, and its other end being made the heaviest, causes it to fall down with this heavy end foremost, on another endless web passing over rollers in the same manner, but in a contrary direction, which brings it back again beneath the small vat to a place where a workman stands, to place the moulds on the first web, which is to convey them beneath the trough, where they receive the pulp.

Another method is described in the specification of pressing the soft sheet, by the action of a platform forced vertically against another, that lies beneath the first endless web, instead of by the operation of the rollers above described; but the first mode detailed here seems preferable to the other from its requiring less attendance. An Horizontal trough is placed at the lowest part of the felt web, and at the other parts of the apparatus which require it, to receive the water which may be pressed out of the paper by the before-mentioned operations.

The wire web of the mould, instead of being nailed at the top of the frame, is turned over, and fastened at the sides, the frame is brought to an edge at its upper part, and its whole outside is covered with thin metal; on which another frame of wood or metal is placed, which slides up and down, and forms the deckle, which by pressure or re-action, from the bearing parts of the agitable frame along which the first endless web conveys it, is made to stand a little above the face, when the mould is placed in the situation to receive its charge, and is suffered to slide back, for want of the like pressure or re-action, when the mould arrives at the felt web, which couches the paper. The means of putting the machinery in motion is not described, but may be easily conceived by any person acquainted with Engines; and is left to the judgment of the person who constructs it, as is also the choice of the materials proper for each of its parts.

Remarks. The chief principles of the machinery described in the above
BELFAST MAG. NO XVI.

specification, are evidently derived from the methods recounted in those of the patents of Mr. Bramah, and of Messrs. Fourdronier, taken out some time before for the same purposes. Mr. Cobb has however simplified their processes, as well as the machinery used in them, by a judicious introduction of manual labour at certain parts of the operation, but whether this will be sufficient to constitute a new patent right must be left to legal decision.

Patent of Mr. Mark Dobito, of Kirtling, Cambridgeshire, for an Improved Plough, for underdraining land. Dated June, 1809.

The apparatus described in Mr. Dobito's specification, may be divided into two parts, the first consists of a mole plough, which differs only from that which has been for some time in use in England, in having a roller beneath the head of the beam, and another beneath the heel of the handle, to sustain the beam at the surface of the earth, as the plough is drawn forward, of which the acting parts are a horizontal conical piece of iron attached to the beam by a vertical flat piece, like a coulter, by which its depth can be regulated, and a cutting coulter placed farther forward in the usual manner. The other part of the apparatus is a moveable capstan, placed on a frame furnished with low wheels, which is capable of being fixed at any station required, by one or more anchors with a single fluke, and by props behind, which press against the earth at a very small angle of inclination. The plough is to be drawn forward by a rope or chain, extending from it, and rolled round the barrel of the capstan, by the action of men or horses at the bars.

Remarks. In a country such as China, where agriculture is almost totally carried on by manual labour, such an apparatus as this might be of use; but where horses can be hired at a reasonable rate, it would certainly be more advantageous to encrease the number of horses, in proportion to the force required in moving forward the mole plough, than to use any machinery which would require so
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much time in fixing it at each station, and in unfixing it again, and moving it from place to place, as this capstan would demand. The addition of the rollers to the mole plough seems an useful improvement, and there can be no doubt but that this plough by itself, independent of the capstan, drawn forward in the usual manner, would perform very well.

Patent of Mr. Samuel Clegg, of Manchester, for a Rotative Steam Engine, Dated July, 1809.

The piston of Mr. Clegg's Steam Engine, revolves horizontally in a hollow ring of cast iron, the vertical section of which is a semicircle; this piston is of the same shape as the ring, and is attached to a vertical axis in the centre by a flat bar, that lies between the upper plate of the engine, and the hollow ring. To prevent the steam from passing in the space about this connecting part, a number of upright pieces of metal, rounded a little at their bottoms, are placed all round in a smaller hollow ring, of a rectangular section, in contact and capable only of a verticle motion; the connecting part has a small roller in front, which passes under these upright pieces, and lifts them up in succession, and their own weight, assisted by springs at top, causes them to fall again into their first positions, as fast as the connector passes. Water is let in over them to keep the joints closer.

In the large hollow ring, a semicircular valve is placed on a hinge, which fits it exactly, and is capable of being moved up into a recess in the covering flat plate made to fit it. The steam is let in between this valve and the piston, which acquires momentum sufficient, before it comes round to it behind, to raise it up and pass beyond it; when it falls down again, and the action of the steam re-commences. The piston is represented of considerable bulk, with a view, it is supposed of encreasing the momentum so as to supply the action of a fly wheel. The power of the engine can be encreased by making a communication between a condenser, and the part of the large hollow ring at the opposite side of the valve from that at which the steam is admitted. The shaft or axis in the

centre gives motion to the pumps, steam valve, and all other requisite movements. The engine may be made to work by the pressure of a column of water introduced instead of steam.

The patentee states that he finds these engines answer in practice all the intended ends; that they cost only half the price of beam engines, take up little room, and make no noise; he mentions also that the space through which a piston of an engine of twenty horses power moves, will generally be about twenty feet.

Remarks. No account is given of any method of stuffing the piston, and it is apprehended this would not be easily affected, or readily kept tight from the shape of this part. The complication of the upright sliding poppets, to close the path of the connector, is also very objectionable; and however perfectly the engine might work at first, while these parts were new and nicely fitted, there can be little doubt but that from their constant motion they would be soon worn so much as to let much steam escape to a loss, and that, if the engine did not actually stop from this circumstance, its powers for the same expense of fuel would be considerably inferior to those of Watt's beam engines.

On Electro Chemical Experiments, by Mr. G. J. Singer.

Phil. Jour. v. 24, p. 174.

Mr. Singer has found, that the prevalent idea of a powerful Voltaic battery being necessary for the repetition of the new experiments, is mistaken, and that when the requisite precautions are observed, an apparatus of very moderate powers is sufficient.

The mode of employing the Voltaic battery at present in use, is by far the worst, when it is intended for experiments of decomposition; as this operation requires a continued action of a power of nearly uniform intensity, which but rarely occurs in the ordinary mode of charging.

Most experimenters estimate the acting power, and the best state of their apparatus by the length of wire which it will fuse. To obtain this object, a strong acid infusion is employed, when the battery is not of